

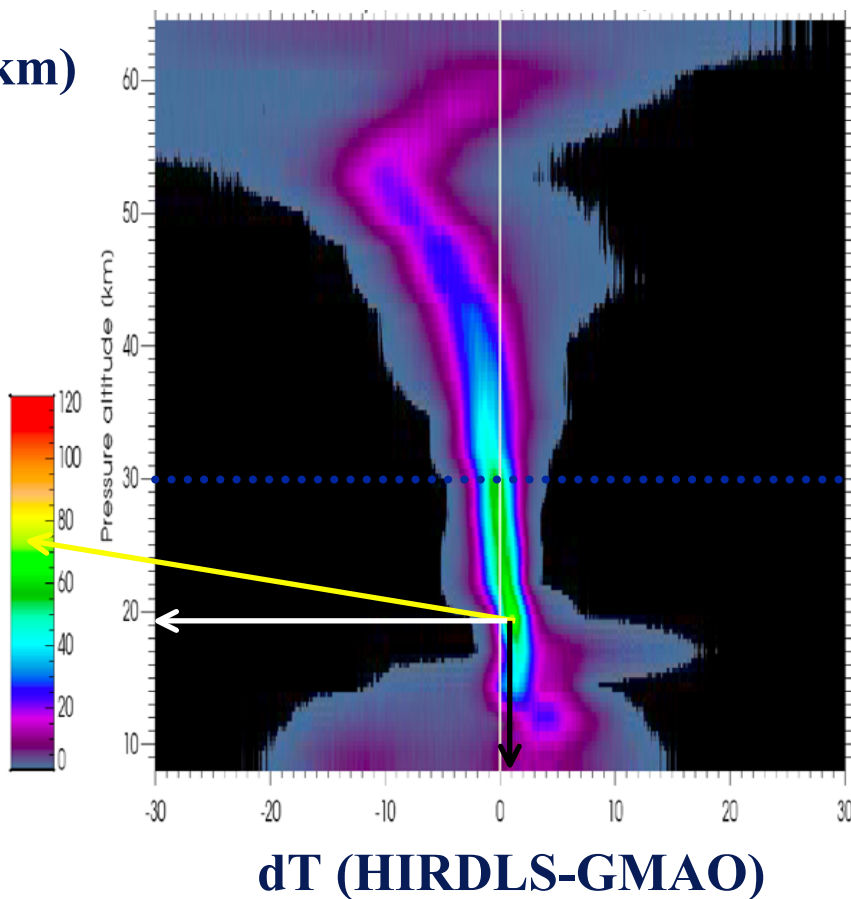
Temperature Validation HIRDLS

**Hyunah Lee
and the HIRDLS Team**

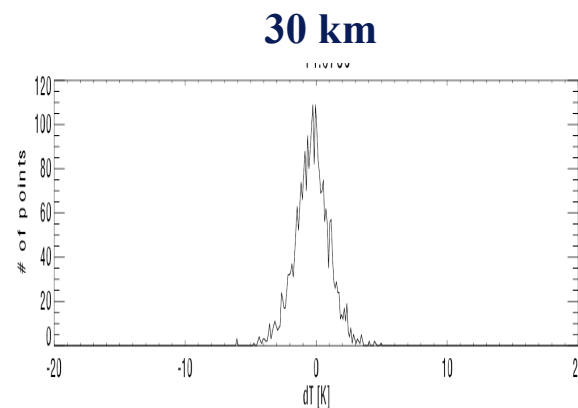
12 September 2006

2D histogram

Altitude (km)

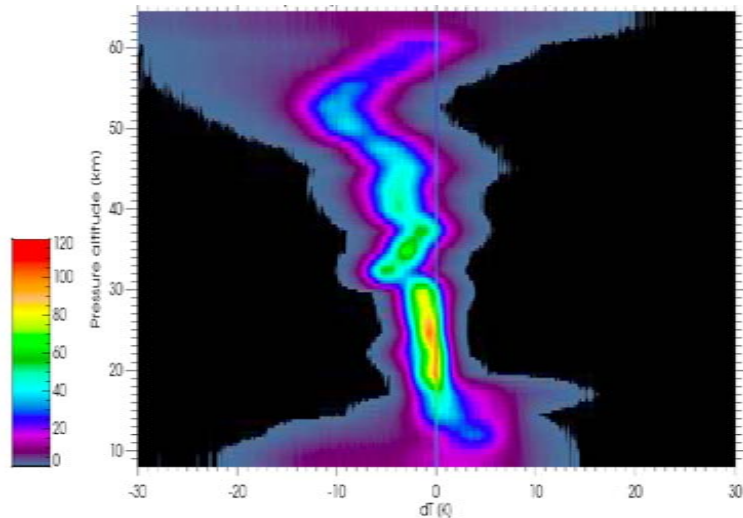


Cross section at each altitude represents a histogram to show the number of points to have dT values at each altitude

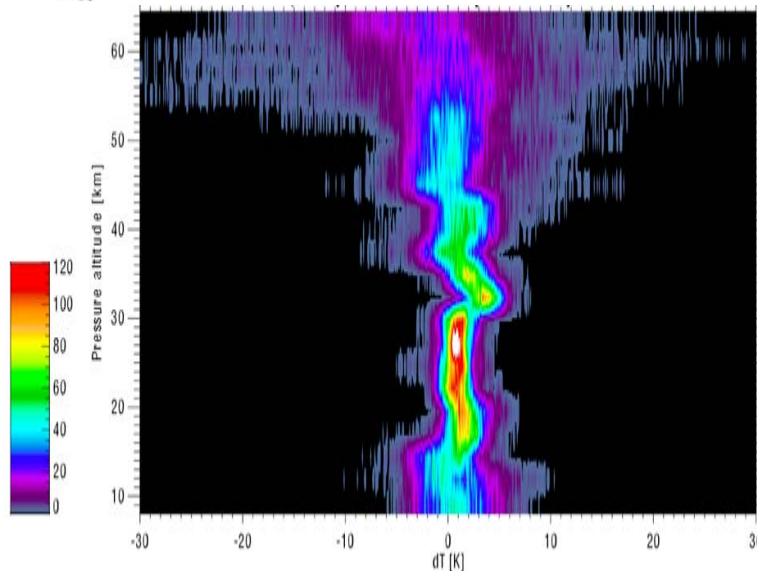
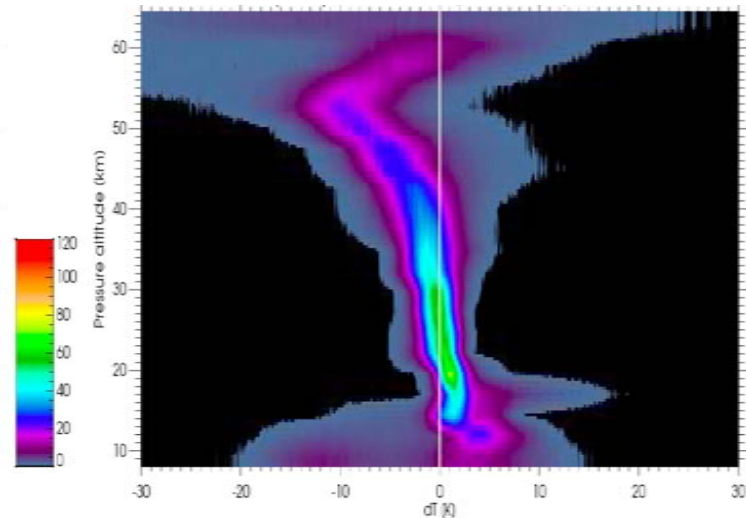


2D histogram 5 May 2006

HIRDLS - MLS



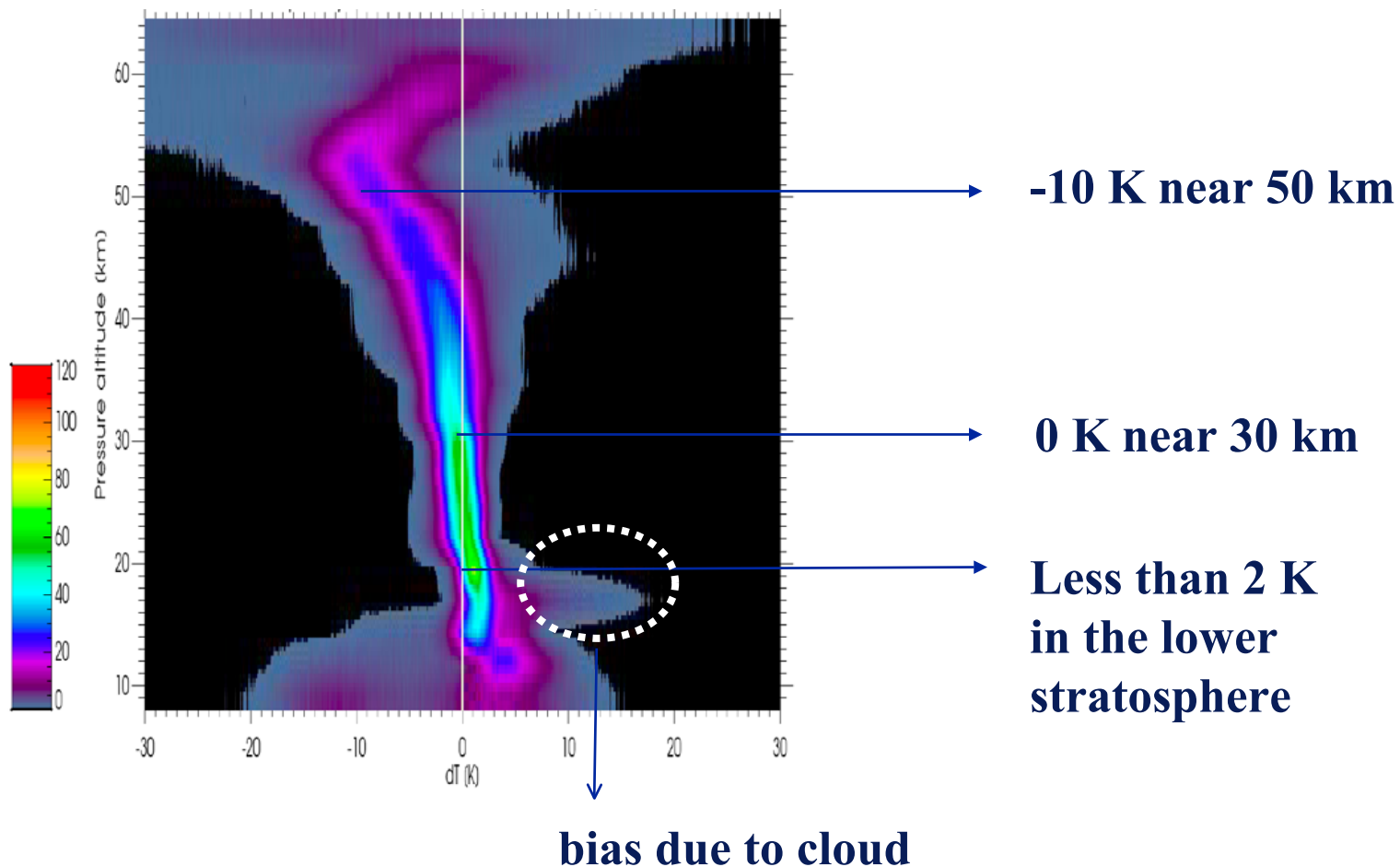
HIRDLS - GMAO

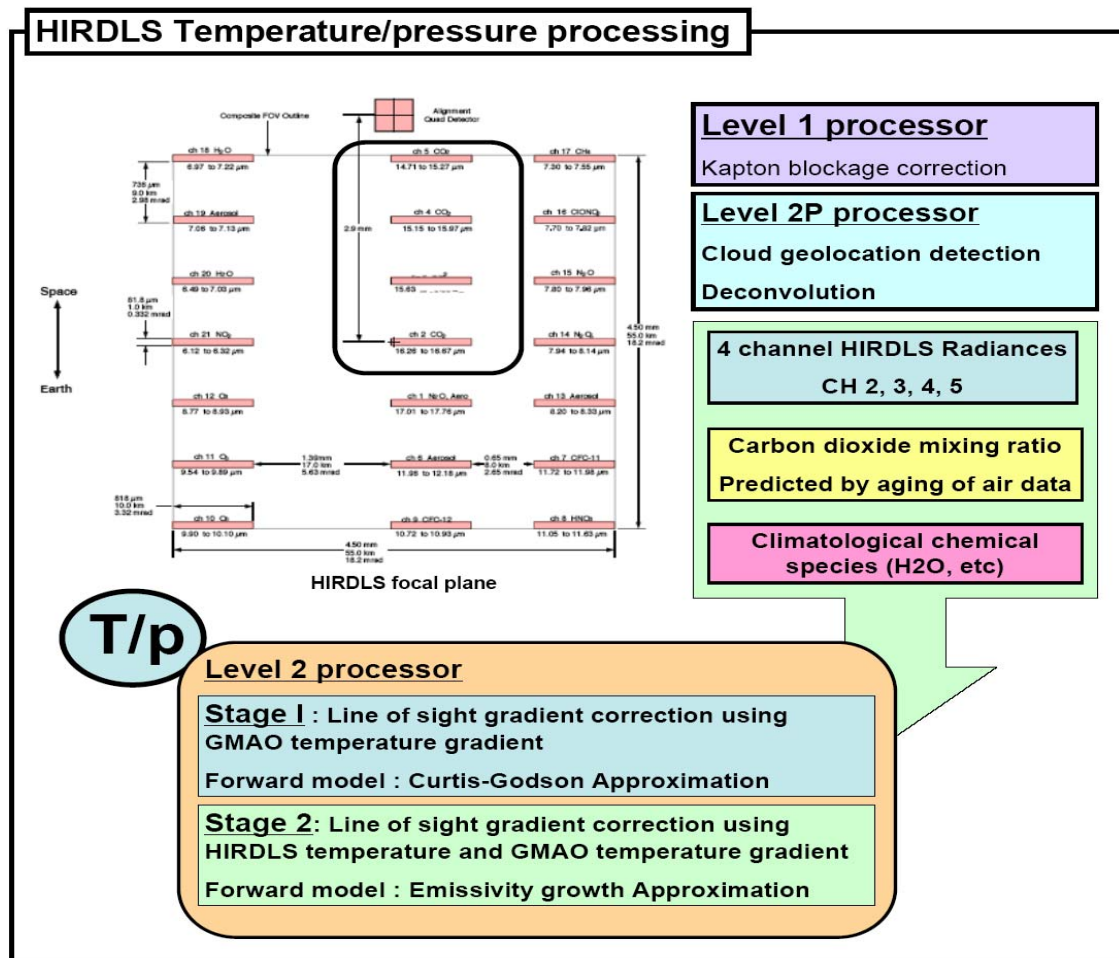


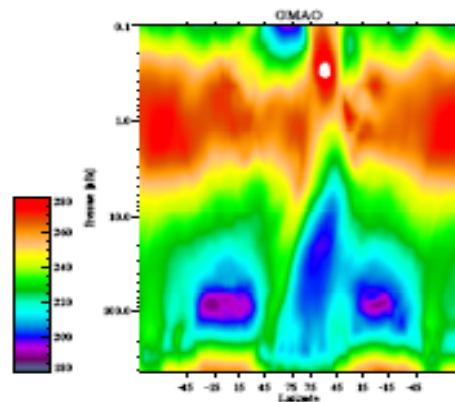
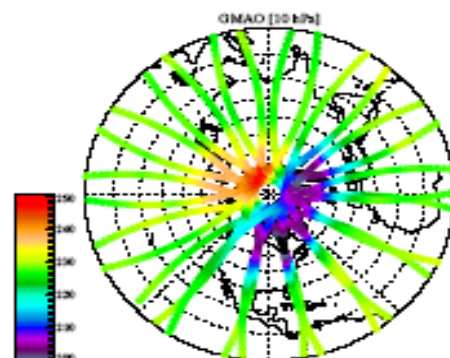
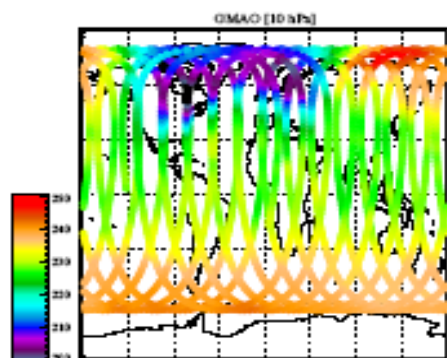
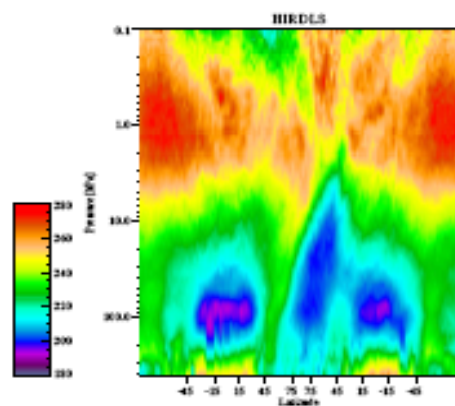
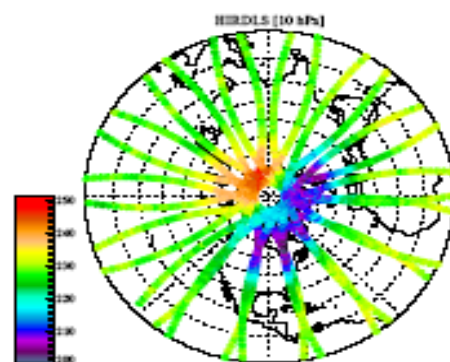
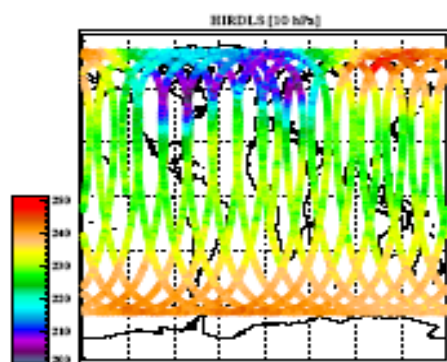
MLS - GMAO

Systematic bias in HIRDLS

4-31 May 2006

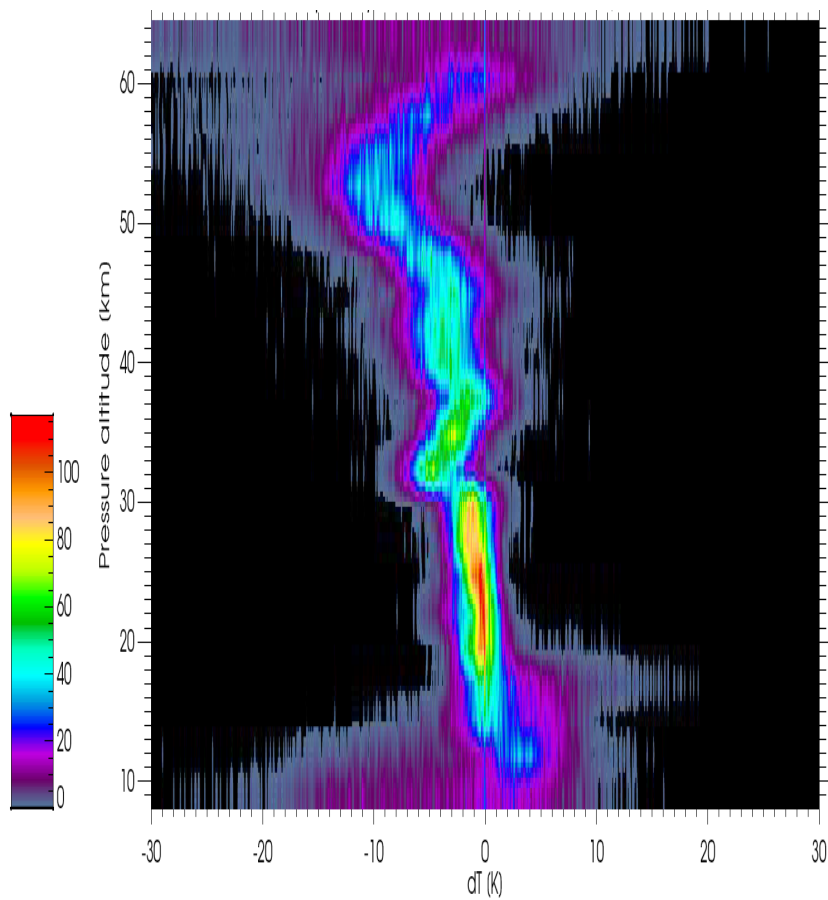




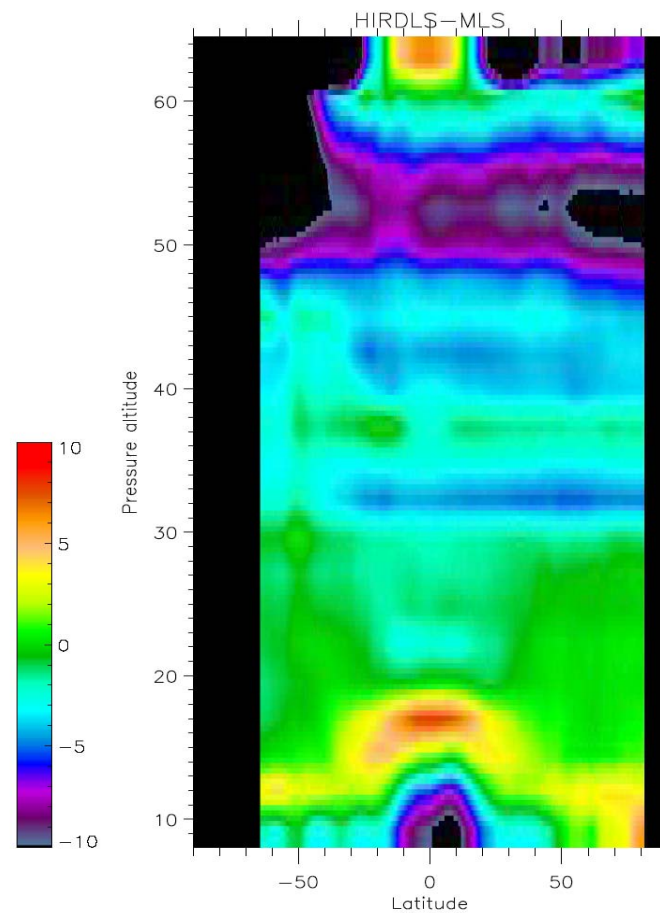


HIRDLS - MLS

2D histogram

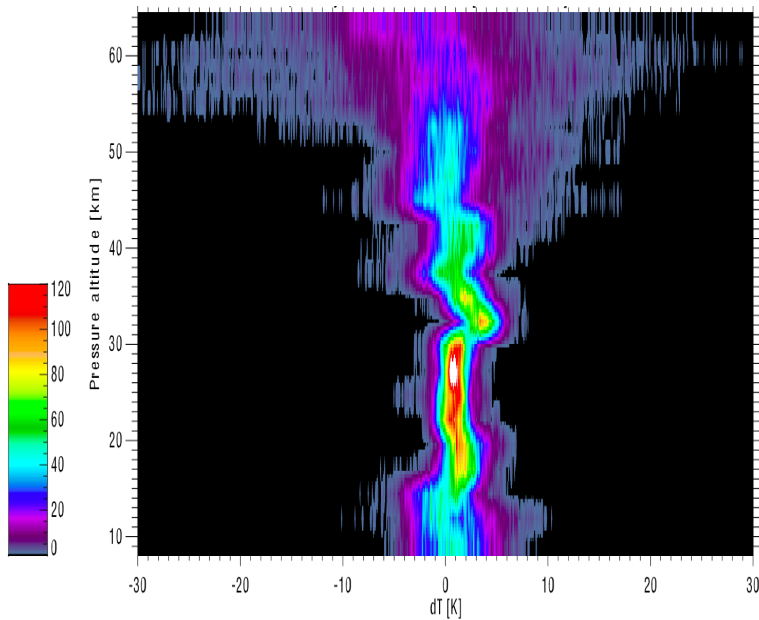


Zonal mean

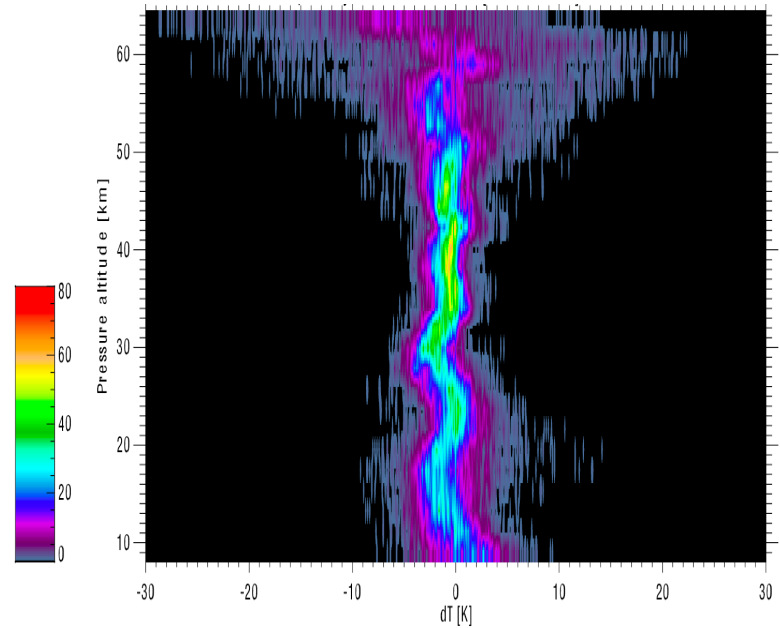


MLS - GMAO

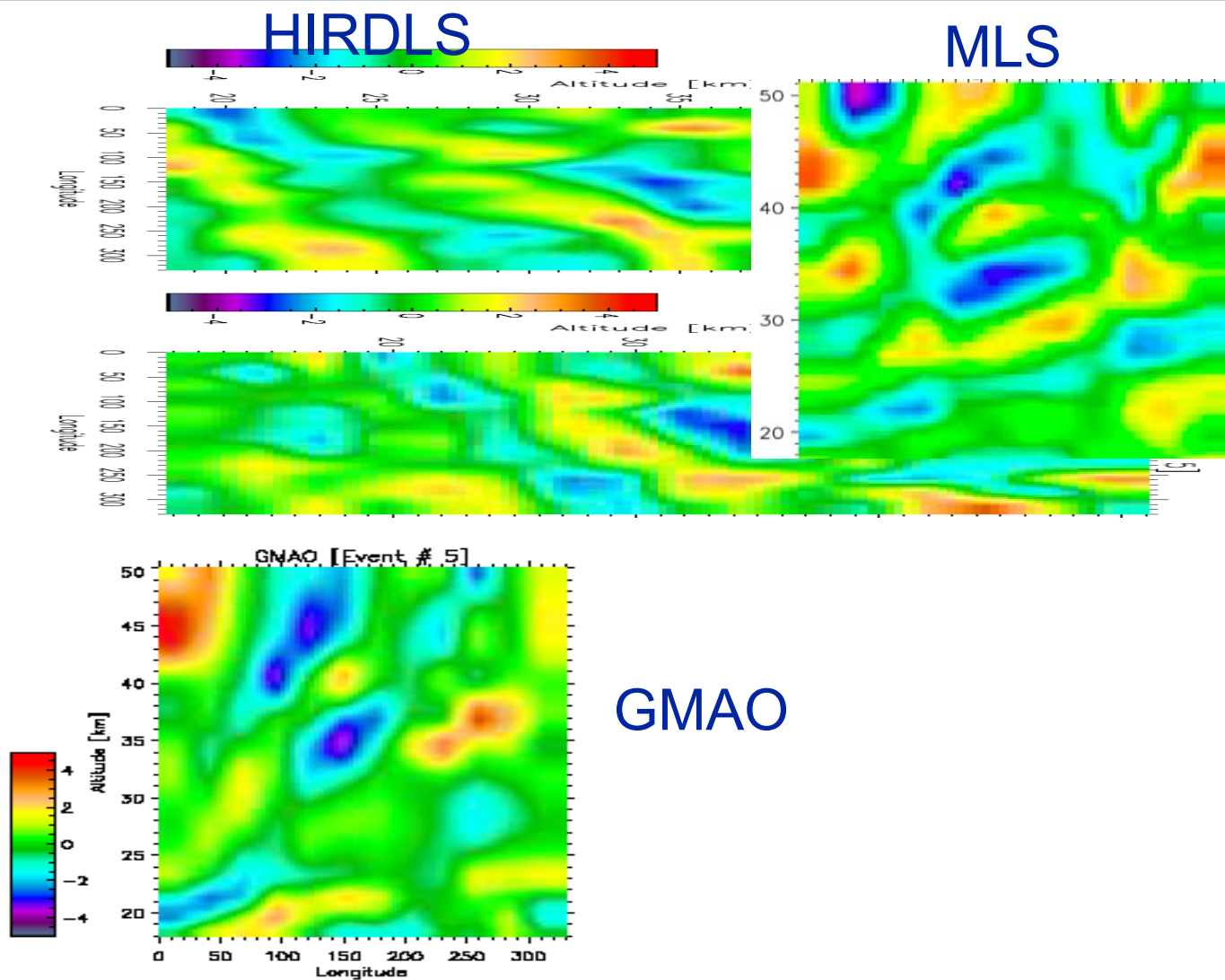
MLS v1.5



MLS v2.1

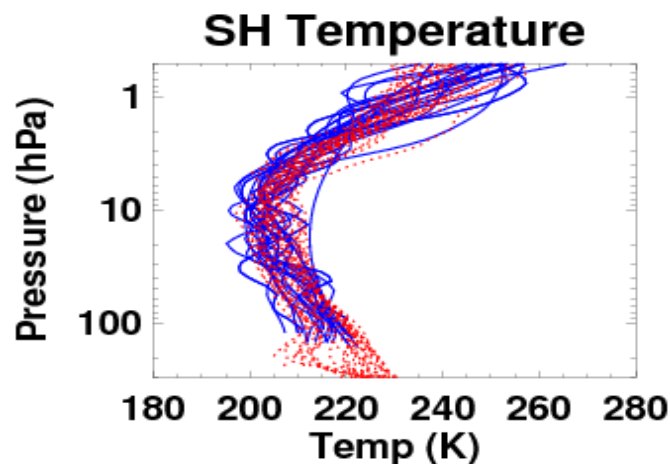
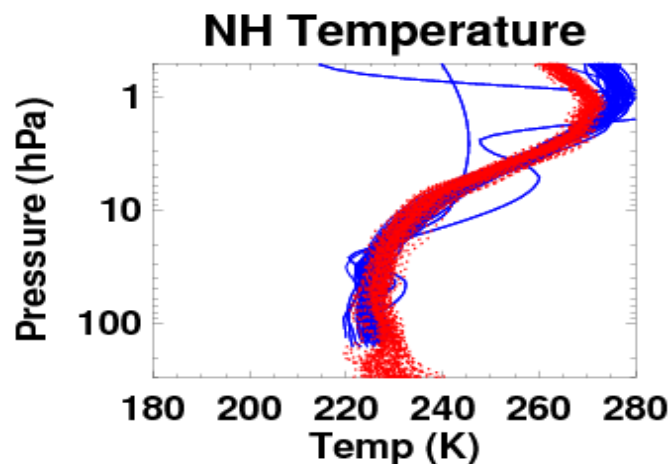


Kelvin wave

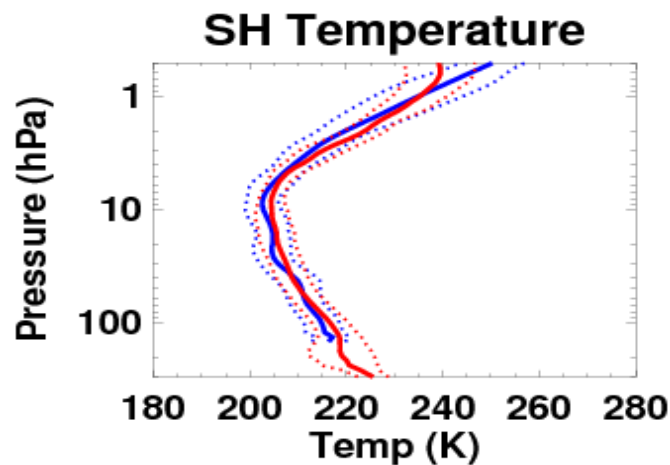
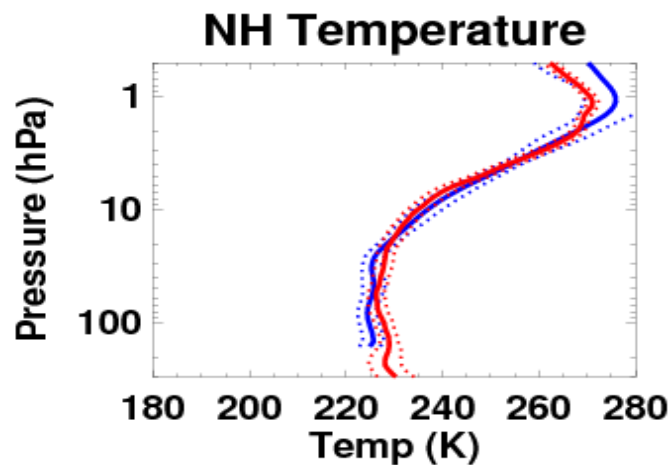


HIRDLS & ACE Temperature Profiles

By Cora Randall, Peter Bernath, Chris Boone



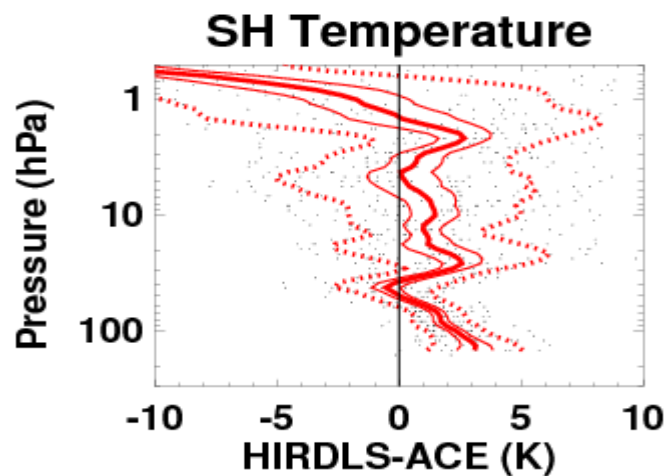
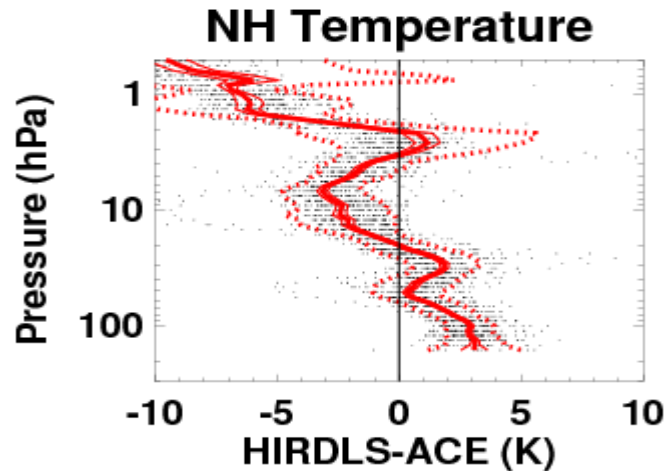
All
Coincidences



Average
(solid) & 1- σ
standard
deviation
(dotted)

HIRDLS-ACE Temperature Differences

By Cora Randall



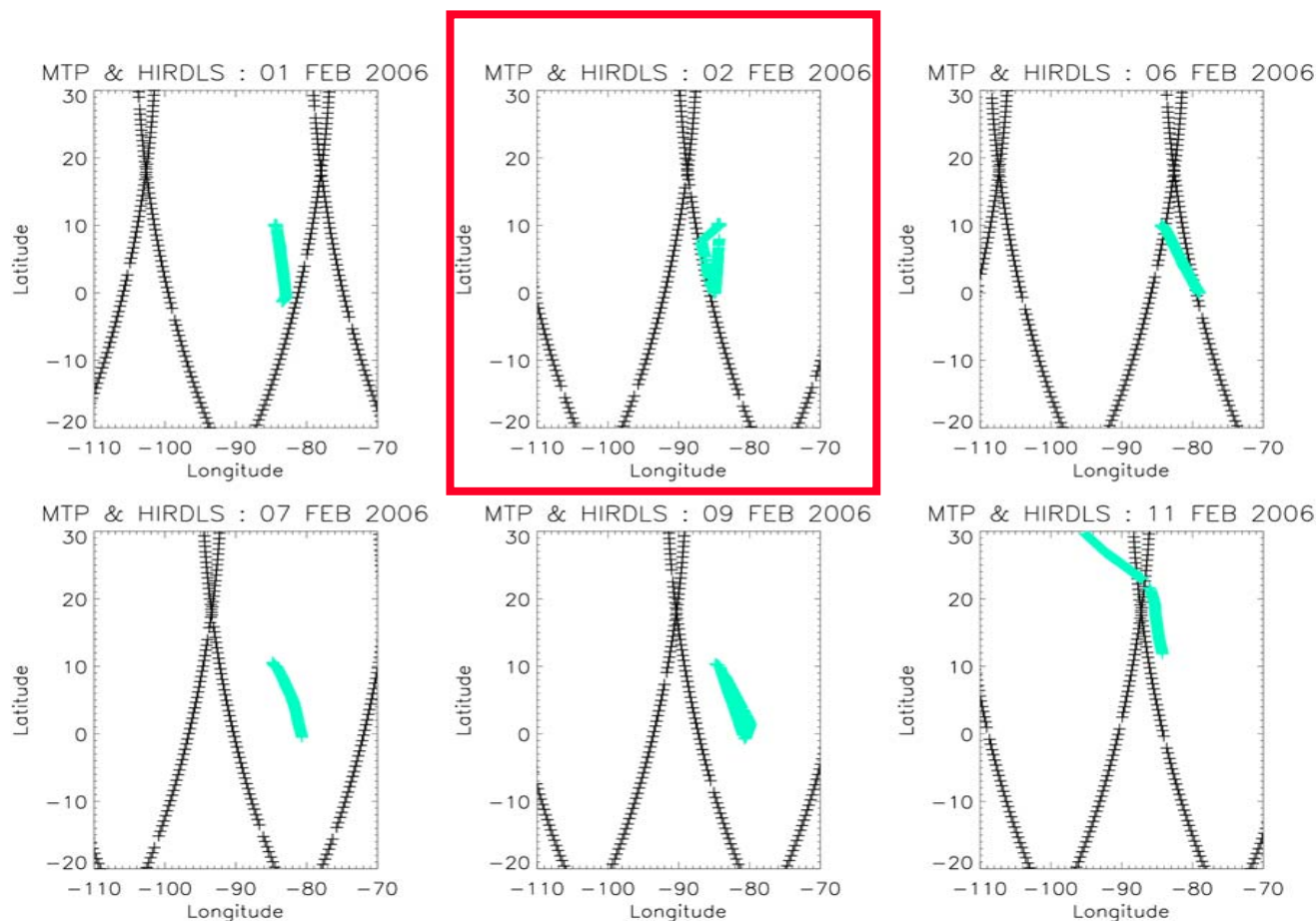
Thick red:
Average

Dotted red:
1- σ distribution

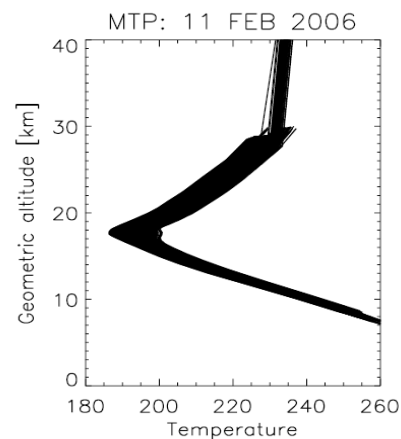
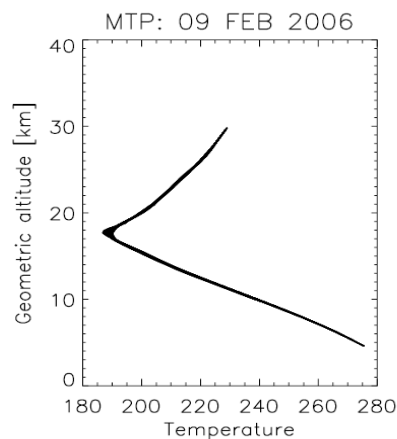
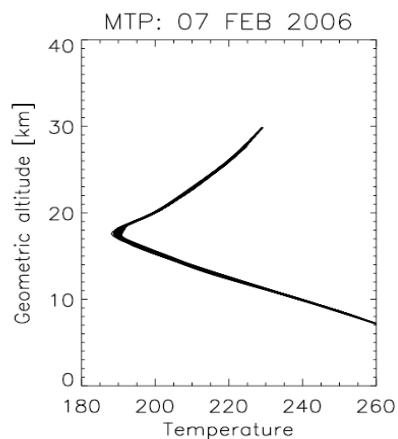
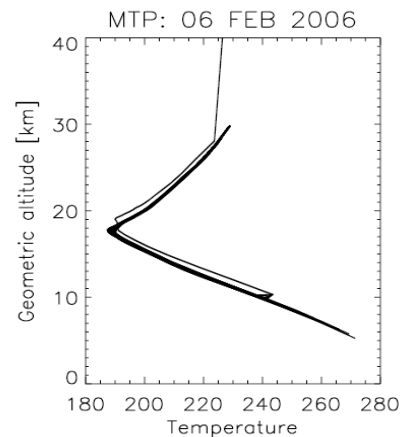
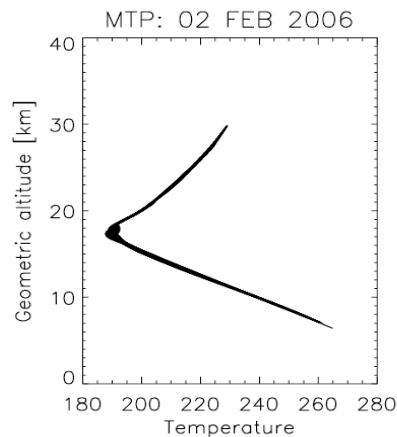
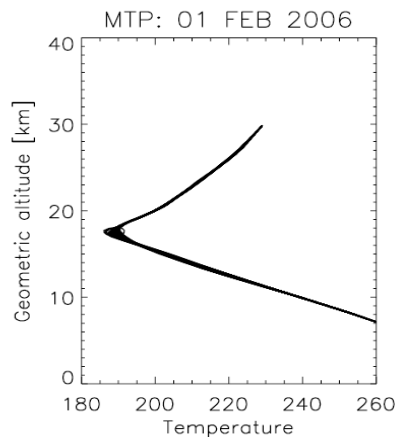
Thin red:
1- σ uncertainty
(often hidden)

Black points:
Individual
differences

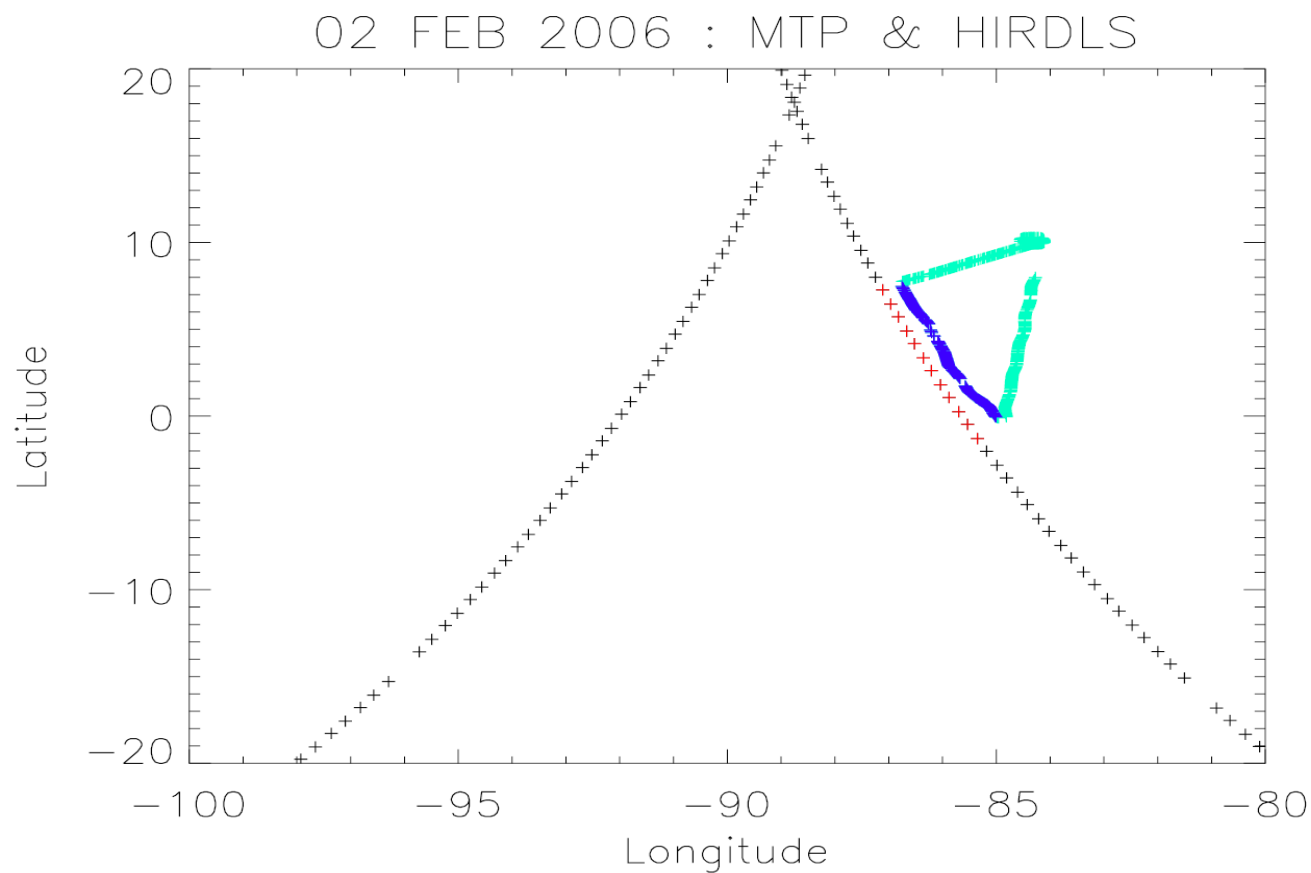
Orbits : MTP & HIRDLS



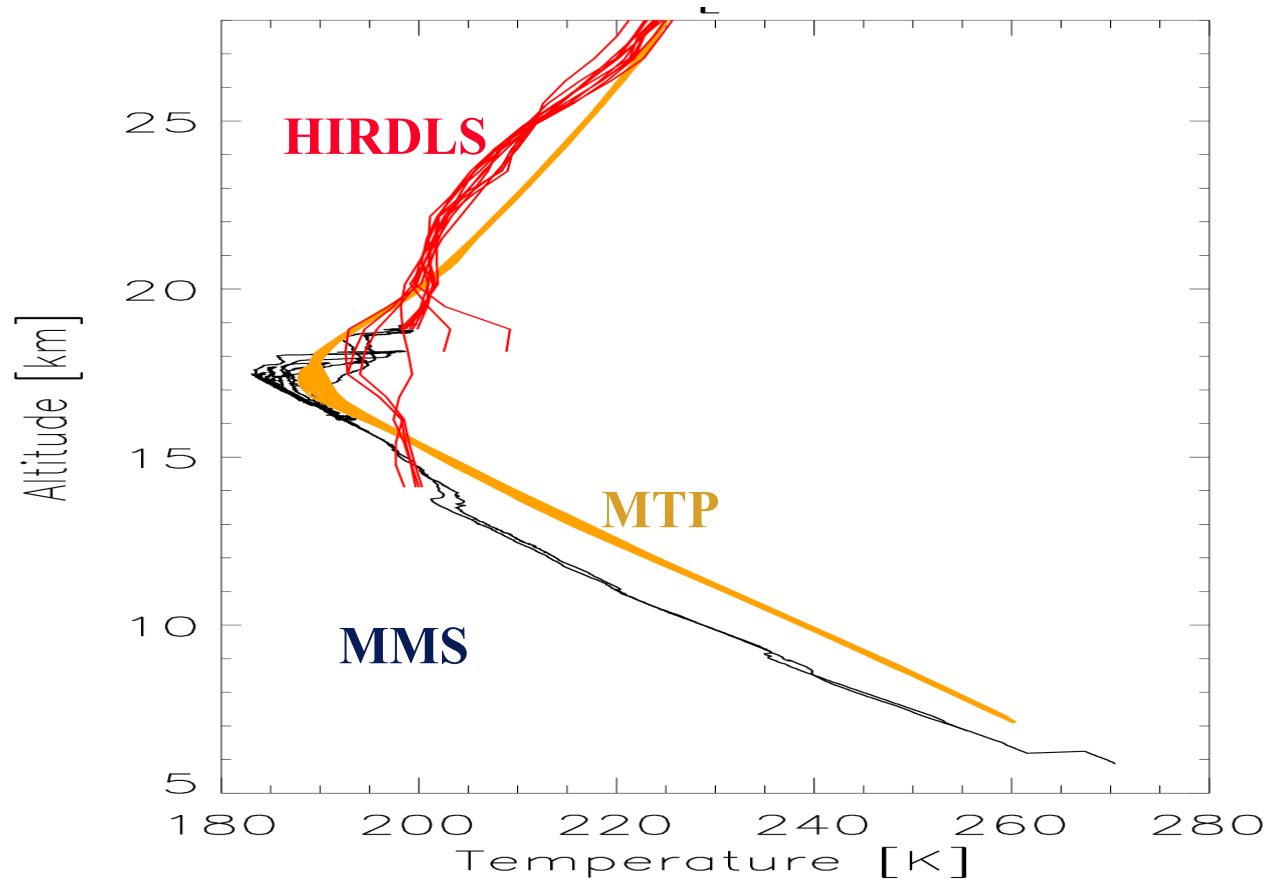
MTP temperature



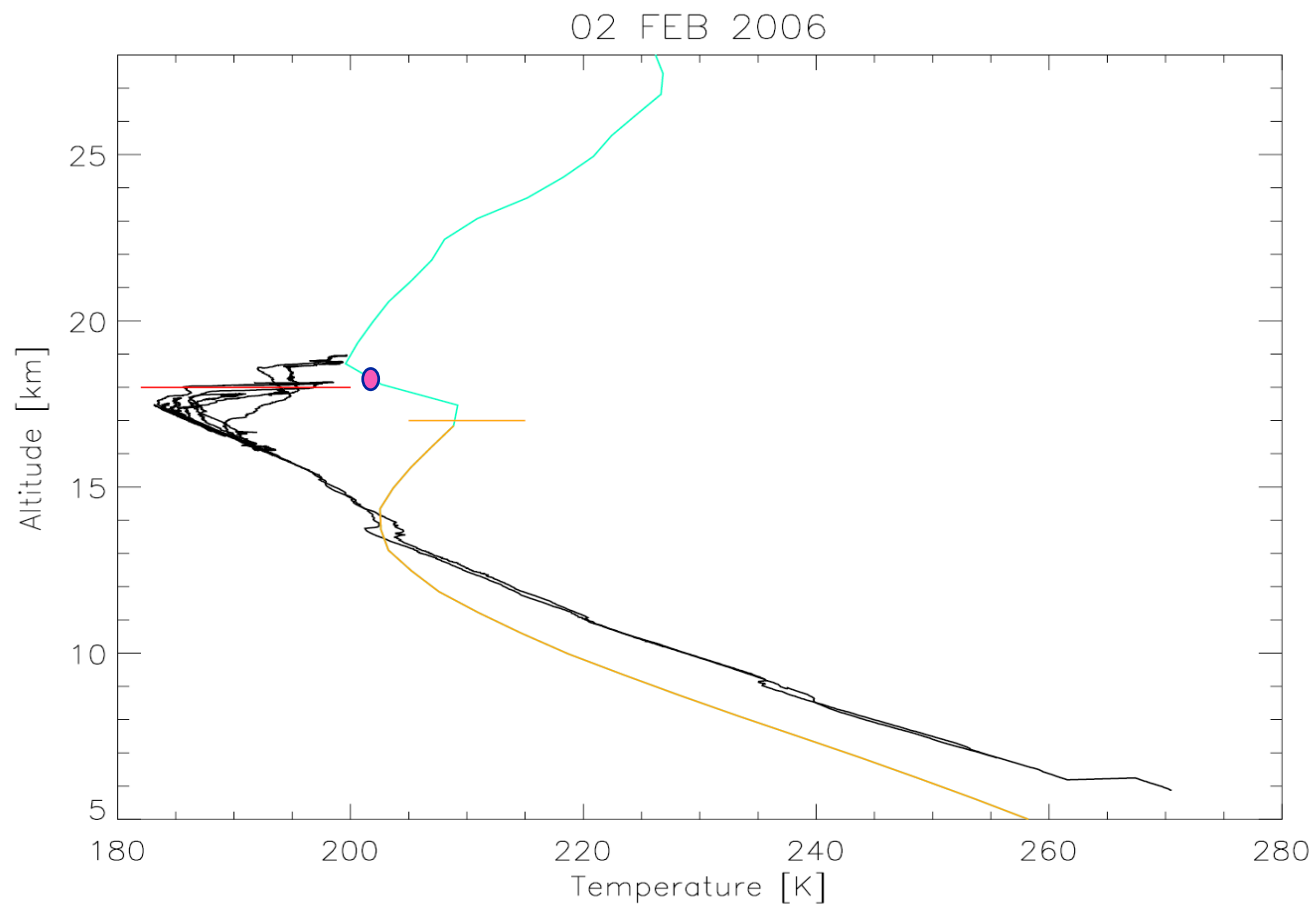
2 February 2006



CR-AVE : HIRDLS, MTP, MMS



Caution





Summary

- The comparisons between HIRDLS temperature and GMAO/MLS/ACE-FTS temperature show systematic bias in HIRDLS temperature. The comparison of HIRDLS temperature to GMAO temperature shows about -10 K near 50 km, 0K near 30 km, and less than 2 K in the lower stratosphere. The comparison of HIRDLS temperature to MLS temperature shows about -1 K bias in the lower stratosphere. The biases are mainly due to the HIRDLS Kapton correction algorithm. The HIRDLS Team is developing a new correction algorithm and upgrading the current one.**
- The comparisons between HIRDLS temperature and MTP/MMS temperature show more than 5 K bias near tropopause level.**
- Extremely warm biased temperature at cloud layer in HIRDLS v2.0 temperature is due to wrongly detected cloud top height.**



Joan Alexander :

Mountain waves in HIRDLS temperature

- Poster session (Wednesday/Thursday)



Hyunah Lee :

Equatorial wave activities in HIRDLS temperature

- Friday morning